



Source Water Assessment Program (SWAP) Report For West Cummington Water Department

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	West Cummington Water Department
<i>PWS Address</i>	West Cummington
<i>City/Town</i>	Cummington, Massachusetts
<i>PWS ID Number</i>	1069002
<i>Local Contact</i>	Donna Forgea
<i>Phone Number</i>	413-634-5358

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #2	1069002-02G	202	507	Low

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The West Cummington Water Department serves 26 homes in a small section of the rural community of West Cummington. The community is served by on-site septic disposal systems. Well 02G is a replacement well installed in November 2000 and is a 38-foot deep, 8 x 12-inch diameter gravel packed well. Although the source has a safe yield in excess of 30-gallons per minute, the approved withdrawal rate for the well is 3.33 gallons per minute based on existing historical demand of the system. The Zone I and Interim Wellhead Protection Area (IWPA) radii are 202 feet and 507 feet, respectively. The Zone I is the protected area immediately surrounding the wellhead while the IWPA provides an interim protection area for a water supply well when the recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The well is located within an unconfined sand and gravel deposit adjacent to the Westfield River. There is no record of a confining, protective clay layer in the vicinity of the well. Wells located in these geological conditions are considered to have a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration from the surface.

Potassium hydroxide is added to the water supply to adjust the pH for corrosion control. For current information on water quality monitoring results, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Please refer to the attached map of the Zone I and IWPA and Table 1 for additional information regarding the location of the well and activities within the protection areas.

2. Discussion of Land Uses in the Protection Areas

There are few potential sources of contamination within the drinking water supply protection areas.

Key issues include:

1. **Zone I ownership; and**
2. **Transportation corridor.**

The overall ranking of susceptibility to contamination for the well is low, based on the presence of few threatening land uses or activities in the Zone I and IWPA, as seen in Table 2. However, since the aquifer is vulnerable, diligence should be maintained to prevent accidents and monitor activities in the vicinity of the wellhead.

1. Zone I ownership – Currently, the water supplier does not own or control the entire Zone I area. Please note that systems not meeting DEP Zone I requirements for ownership or control must get DEP approval and address Zone I ownership prior to increasing water use or modifying systems. Although the map indicates the field adjacent to well is “cropland”, this area is an abandoned field that contains only the motor control building and the treatment facilities for the water supply. A small portion of the Zone I extends across the river and includes the access to the abutters property. That property is utilized as a primitive camping area with a fixed campsite but no utilities. The field is an abandoned hayfield and is currently not utilized as cropland or pasture.

Recommendations:

- V Continue efforts to acquire Zone I through ownership or land use controls. Control access to the wellhead area. Consider purchasing a Conservation Restriction or entering into an agreement for Right-of-First Refusal.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Transportation corridor	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Structures and access	Yes	Yes	-	Water supply structures. Use BMPs. Control or prohibit access

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

- ✓ Use Best Management Practices (BMPs) for handling treatment chemicals and vehicles used to access the area.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

2. Transportation corridor – The well access is along a rural residential road that is relatively lightly traveled. The greatest threat from the road is deicing materials and an accidental spill.

Recommendations:

- ✓ Work with the Town to ensure that road runoff is directed as is feasible, to an area downgradient (southeast) of the well.
- ✓ Prepare an Emergency Response Plan that includes coordination between the DEP, the Water Department the Town and State Police in the event of an accident near the wellhead.
- ✓ Limit access through the property and work to eliminate any right-of-way.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will further enhance the protection of the well and minimize its susceptibility to contamination. The West Cummington Water Department should review and adopt the key recommendations above and the following:

Priority Recommendations:

- ✓ Continue in efforts to acquire ownership or control of Zone I and limit access.

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Use BMPs within the Zone I for treatment chemicals and
- ✓ Prohibit public access to the well and pump house with locking facilities, gating roads, and posting signs as appropriate.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of access or vandalism.
- ✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- ✓ Redirect road drainage in the Zone I away from well area.

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Post drinking water protection area signs at key visibility locations away from the immediate wellhead area.
- ✓ Inform neighbors and consumers regarding BMPs with respect to household hazardous materials handling and disposal and septic system maintenance.
- ✓ Concrete pads should slope away from well and well casing should extend above ground.

Planning:

- ✓ Work with local officials in Cummington to include the West Cummington supply IWPA in the Aquifer Protection District.
- ✓ Have a plan to address short-term water shortages and long-term water demands.

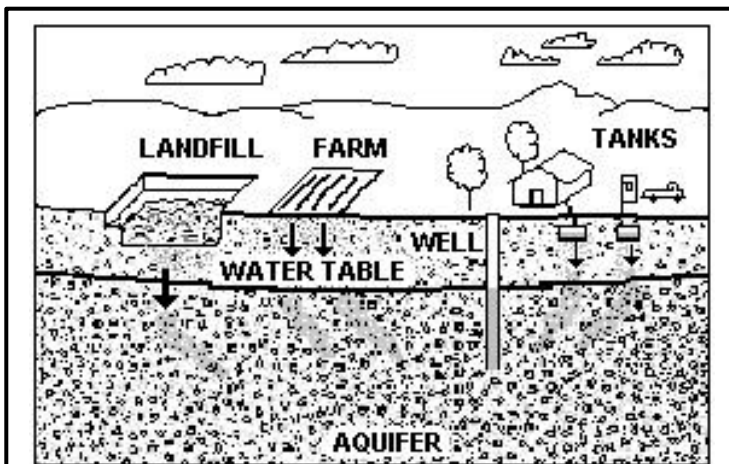


Figure 1: Example of how a well could become contaminated by different land uses and activities.

- V Keep the phone number of a bottled water company readily available in the event of an emergency.
- V Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response (grant application) for the Grant program (RFR) on or about May 1. The responses are generally due on or about July 31. Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Pesticide Use Fact sheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form

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